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Archaeology, experimental archaeology and ethnoarchaeology on bread ovens in Syria

Noor Mulder-Heymans

I would like to add thanks to Dr. Moshe Kochavi from Tel Aviv University to let me mention one of the clay ovens from his excavation, Maria Sidoroff, U.S.A., for assisting me in all the experimental work, Drs. Eveline J. van der Steen from Leiden University, Holland for advising me and Mr. Bishr Istwany, Syria for assisting me at my work in Syria.

1. Introduction and definitions

1 This article explores the relationship between the archaeological remains of clay ovens excavated in the Iron Age level at Tel Hadar, Israel and modern socio-cultural behaviour linked to clay ovens used for bread baking. After a short introduction on one of the excavated ovens and the precise report of one experimentation with local people, most of the text describes my own observations from the past five years in Syria. I specially chose that country because it was there that I noticed a variety of bread ovens still in use, however I noticed that these types of clay bread ovens are rapidly disappearing. I also explored parts of Jordan, Lebanon and Israel, whose study is not yet completed. The use of clay bread ovens in those countries is not as common anymore as in Syria. Through a study that combines archaeology, ethnoarchaeology and experimental archaeology I documented techniques of construction, differentiated various types of ovens and recorded their culinary and social function. Based on this research a worksheet has been developed to maximise the potential for information retrieved during the excavation of clay ovens.

2 The experimental archaeology was done by constructing a clay bread oven to experience every step of the technique in such a process and in such a way that I could gather more data to understand also the excavated clay ovens.

3 It is interesting to see that there is a continuation in certain types of clay bread ovens through the studied countries, even if in certain areas people sometimes switch from one type to another. In various cases the type of clay bread oven seems to be inherent to the environment.

4 My main question is if there is a direct line to draw from the past to the present and, if not, where is the break in using a certain type of clay bread oven.

5 The following terms are used in this paper for the typology of bread ovens used in the past and the present in the Near East :

6 *Tannur* is a clay bread oven of a slightly conical form about one meter high and 40-50 cm wide. There is either a small opening at the base for loading fuel or i twas fuelled through the top opening. Types of fuel are : manure (cowdo), all kinds of wood (i.e. cotton plant). The large, thin « pancake » type of bread (c. 40 cm in diameter) is baked on the inside of the oven. The fuel is on the bottom. Sometimes there is a tiny hole on the backside bottom for bringing extra air. There is an intensive fire and production of much bread (for about one hour). When bread is done than « barbecue » meat can be roasted in the sintering fire or one can boil water or cook a meal on the top, covered by a clay (past) or metal (present) sheet.

7 *Tabun* is a clay bread oven in the form of a small iglo or hut, wide on the bottom (c. 60 cm and wider) and on the top varying from a small hole to a wide one (c. 40 cm) and about 45 cm high. There is a small opening at the base for fuel, however fuel can also be placed from the top opening. Sometimes the tabun is partly dug into the floor. The type of fuel is the same as with a Tannur, dependable of what is growing in the area. The baked bread is in a small « pancake » form (c. 20 cm in diameter) thicker than at the Tannur. The dow is placed on the inside and at a small Tabun on the outside or even on the bottom. When the bread is done cooking is possible on the opening at the top of the oven.

8 *Saj* is a domed metal pan, which is placed over a fire. The « pan » is placed on bricks with the fuel in between. The saj is used by Bedouins, because it is easy to make fire, to bake bread quickly, to remove and to carry it. Fuel exists of what is around in the desert. Nowadays the saj often replaces the Tannur. The average diameter of the metal pan is about 30-50 cm. The dow is flapped on top of the metal pan and produces large thin pieces of bread.

9 *Waqdiah* is a combination of a Tannur, a Tabun and a Saj. It shows a domed conical 80-100 cm high clay construction with a large opening on the frontal side. This opening is horizontally split in half by a metal sheet on which one can bake the bread. On the bottom, under the metal sheet the fuel is placed. In several places it served more as a chicken cot.

Fig. 1A : Tannur

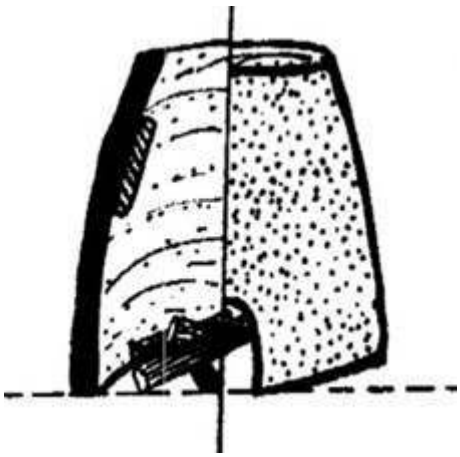


Fig. 1B : Tabun

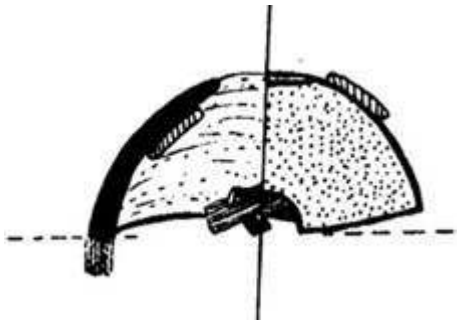


Fig. 1 C : Saj

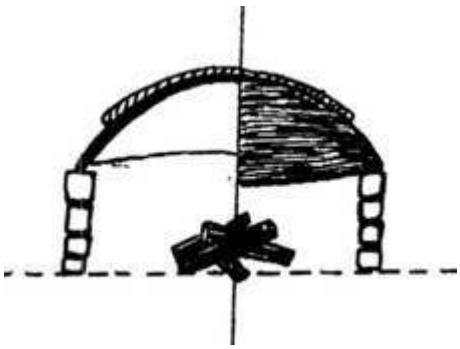
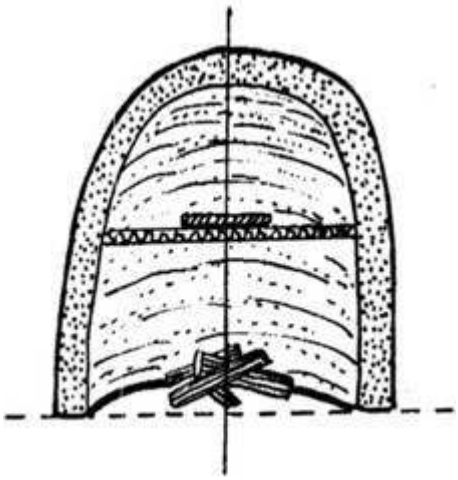


Fig. 1D : Waqdiah



2. Archaeology

2.1. Introduction

10 During years of digging I noticed that clay ovens were excavated on several sites. These raised some questions :

11 1. What were these clay ovens used for ?

12 2. How were these clay ovens constructed ?

13 3. In what context of the house/village were they placed ?

14 4. What different types of clay ovens were developed ?

Fig. 2 : Tel Hadar, Israel. Tannur.

2.2. The discoveries : one example

15 At Tel Hadar (Israel) a very well preserved Tannur type oven was found in stratum IV. It dated of the 11th century B.C., in the Iron age. The Tannur stood on a pebbled floor, mixed with crushed sherds and the lower part of the oven was lined with potsherds, many of which were handles of storage jars (Fig. 2). The diameter of the oven was about 50 cm. The only opening was on the top. The oven was complete and was c. 1 m high. The clay was mixed with chalk and organic material. The location of the oven seemed to be in a courtyard right outside the granary and the pottery storehouse. There is no evidence for a covered area like an oven house. Since the area around is not yet further explored it is hard to conclude what relation the oven had with the buildings next to it on the south side.

16 Outside the oven more pottery and a grinding stone were found. Remnants of a second oven were found to the north, crushed by a later wall.

17 Analysis of the ashes and residue, if available, could have helped to analyse the type of fuel they used by the ancient bakers.

2.3. Questions raised

18 When we excavate these types of clay ovens it can tell us something about the daily life of the inhabitants of a village, a city, a stronghold or a distribution centre. It can tell us something about the the kind of bread and fuel, the construction, purpose of the area with the oven and, more generally, about the flora, fauna and agriculture of those days in that specific area (see also Tab. 1).

Kind of bread and fuel

19 What kind of bread were they baking ?

20 What kind of wheat did they use and how much of it did they produce ?

21 What kind of fuel did they use ?

22 If it was wood, can it tell us something about the type of trees/bushes growing in the area ?

TABLE 1 (first part)

Worksheet for maximising the potential for information retrieved during the excavation of clay ovens

Clay ovens : Area in excavation		
	Locus	
	Date	
Type of oven:	Tannur	
	Tanur	
	Other	
Opening on the top:		yes/no
Small opening on the bottom:		yes/no
Opening halfway:		yes/no
Inside diameter of the top of the oven		cm
Inside diameter of the bottom of the oven		cm
Total height of the oven		cm
Estimated original height of the oven		cm
Type of clay:		
Paste composition:		
Addition of temper		yes/no
Temper to be identifiable		yes/no
Straw ☐	manure ☐	goathair ☐
Oven constructed with coils		yes/no
The size of the coils		H___cm x L___cm
Oven constructed with loaves		yes/no
The size of the loaves		H___cm x L___cm
Oven with sandwich wall		yes/no
Exterior of oven covered with sherds		yes/no
Coat of clay over the sherds		yes/no
Outer face smoothed		yes/no
Outer face with a slip layer		yes/no
Munsell soil colour chart:		
Colour on the interior:		
Colour on the exterior:		

Position:	
Location of the oven in a courtyard	yes/no
Location of the oven in a corner	yes/no
Covered by a roof	yes/no
Inside an ovenhouse	yes/no
Near a house	yes/no
Near a building	yes/no
In a kitchen	yes/no
In a street	yes/no

Oven area	
Oven walled off by a row of stones	yes/no
Postholes for cover for ovens	yes/no

Construction of the ovens

23 Who made the ovens and how ?

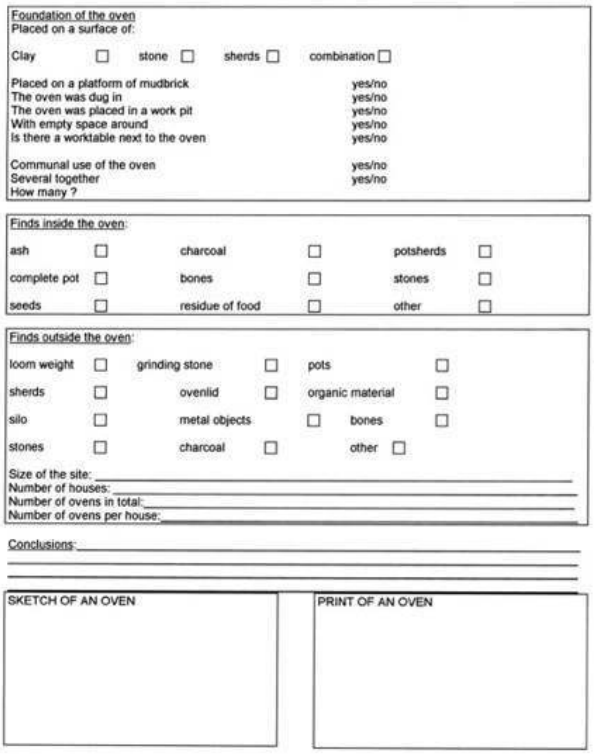
24 How long did an oven last ? Sometimes ovens are built on top of each other.

25 Why did people built several ovens on top of each other ?

26 Were the ovens only used for bread baking or also for regular cooking ?

27 Is there a difference between an oven for one household or a community oven ?

TABLE 1 (second part)



Purpose of the area

28 What was the purpose of the area with the ovens ?

29 Why were the ovens placed close to the entrance of the pottery storehouse ?

30 Was the area a courtyard for cooking purposes and if so for whom ?

31 Was the oven used for communal baking or to provide the visitor with some food ?

32 If it was communal baking can it tell us something about the population density of the village/area ?

3. Experimental Archaeology

3.1. The experiment

33 One of the most important questions to solve was the procedure of making a clay oven for bread baking and how it was used. This gave us, Maria Sidoroff (my colleague and friend) and me, the idea of doing some experimental work on a clay oven made by ourselves. Since we worked near Golan and had some Druze workers, who still baked their own bread and made their own oven we invited them to construct a clay oven for bread baking (Fig. 3).

34 We gathered our clay from the Jordan river. It took about one hour to collect the clay. The clay was very dark grey and contained roots and other patches of decomposed organic material, which appeared like black patches within the clay. Four people collected about sixty pounds of clay from the banks of the river. Approximately eighty pounds of studio

clay was examined and set aside in plastic bags to retain moisture. Studio clay was mixed with Jordan river clay to get a better texture. The clay was a low-fire clay, that turned buff when heated, and the temper was medium grey.

Fig. 3 : Kibbutz Afiq, Israel. Druze making a small Tabun.

35 Two bags (each about fifteen gallons, c. 55 litre, size) of straw were gathered at the kibbutz dairy farm to ignite the dung used in pottery firings and to add as temper to the clay used to build the « bread oven ».

36 Hamoud, one of the Druze, set to work and prepared a mixture of 20 pounds of studio clay and 20 pounds of Jordan river clay and an equal amount of straw (by volume) with his feet. He and Assad, the other Druze, scavenged a flat piece of corrugated board about 40 inches (100 cm) square and placed the board in the shade. Upon the board they began to build the oven composed of seven tiers of small loaves of the clay mixture in a horse-shoe shape. Assad formed the loaves (about 2 pounds each) and handed them, one at a time, to Hamoud who incorporated the loaves of clay into the smooth wall with his fingers and the palms of his hands. After the walls were complete some metal coathangers were set into the top to support the structure. Hamoud repeatedly smoothed the walls by dipping his hands in water and smearing the inside and outside surfaces to create a slip. The final structure was a smaller version of the oven than the one reconstructed at the Golan museum of the Talmudic period, with one opening to receive the fuel and a second opening on the top to hold a pot for boiling or stewing.

37 The oven was complete in three hours.

38 The measurements of the oven were :

- 18 inches high (45 cm)
- 18 inches across (45 cm)
- 24 inches long (60 cm)

39 Two days later Maria made a clay cook pot (about 1/2 gallon, 1. 8 litre volume) to be used on top of the oven with a mixture of 50 % Jordan clay and 50 % studio clay. Three days later, we gathered eight bags (each 30 gallon, 105 litre, size) of dried cow manure from fields in the area of Leviah site and from the fields of Moshav Ramot Magshinim.

40 The next day the clay oven was placed in an open area and filled with pieces of manure about five inches (12 cm) in diameter and some small sticks as directed by Hamoud. Some small pots were placed inside the oven among the pieces of fuel. The cook pot that was fired the day before was placed over the top opening of the oven (Fig. 4) and a thick layer of stacked manure completely surrounded the oven and the pot Fig. 5). The plan was to

refire the pot a second time to strengthen it for cooking experiments. Two hours later all the fuel had burned to ash. Fuel was added continuously through the opening of the oven which glowed with intense heat three hours later. The result was that the oven and the pots inside were well fired.

Fig. 4 : Borovce, distr. Piestany : Recoonstructed vessel from oven 1, Linear Pottery culture (ca.1/3)

Fig. 5 : Kibbutz Afiq, Israel. The firing of the Tabun.

41 The next day experimental cooking was done on the clay oven and in the pot which was placed again on the top opening. A fire was made inside the oven with manure pieces and sticks for fuel. Olive oil was heated in the cook pot, onions were sautéed in the oil then lentils and water were poured in almost to the top and brought to a boil. During this time four handfuls of a flour/salt mixture were blended with one half cup of water in a bowl to make a smooth paste. More flour and more water were added to make dough for a flat bread to be cooked on the outside of the oven. It took about two hours of stoking the oven to generate enough heat on the surface of the oven to cook the dough. The lentils were cooked after about one hour in the pot.

42 Results : The bread and lentils were delicious and eaten by the children of the kibbutz. This experimental cooking allowed to show they baked the dough on the surface of the oven.

43 In the meantime we visited the village of the Druze, Bokata on the Golan, and saw the ovenhouse, built of basalt since we were in the basalt area. Inside was a large « dug in » Tabun, but it functioned more as a « Saj », because the lady in charge placed a large curved metal sheet over the top opening to bake the bread on. The bread it produced is

comparable with pitah bread, but much larger and thinner. The Druze brought it to the excavation site for breakfast and filled it with « leben », yoghurt.

44 We were told that there were no clay bread ovens in use anymore in Bokata. The village bakery supplied the bread.

Fig. 6 : Abtaa, Syria. Woman baking bread in a Tabun, half in ground, half above ground. Her arm is protected against the fire.

3.2. Conclusions

45 When the Druze were asked to build a clay bread oven for us they constructed a small « movable Tabun » while we excavated only Tannurs in Tel Hadar. In the village Bokata the Druze still knew how to build a Tabun, but baked the bread on a metal sheet instead of inside the walls of the Tabun. However they made a movable Tabun for us and instructed us to bake the bread on the outside of the Tabun. The Druze of the jebel Druze in Syria nowadays still use different types of Tabuns (*tawabeen*) as will be shown later on in this article. Through our experiment other questions were raised: was the use of a Tabun or a Tannur or another type of bread oven inherent to the tribe, the area, flora and fauna ? Was it possible to find more data about the use of ovens in the past by studying ovens still in use ? I realised that by doing this I had to be very careful since there existed a time span of thousands of years. Would it be possible to find a line from the past to the present ? This brought me to the third part of this research.

4. Ethnoarchaeology on bread ovens

4.1. Introduction

46 In the meantime it became clear to me that there existed a variety of bread ovens used by different people in different areas. I started in Syria and visited villages where people

were still using clay ovens for bread baking. It was important to cover the different areas of Syria, agricultural and pastoral. The most important areas I explored were :

- The south, the Hauran and Jebel Druze
- The area around Damascus
- The west and coastal area
- The north around Aleppo
- The Chabur, Eufrates and Balikh rivers area
- The desert in the middle around Palmyra

47 From these areas I will describe the best examples I found and visited.

4.2. The south, the Hauran and Jebel Druze

48 In the south I travelled to the Druze village of Abtaa. The family Serad used the Tabun, built in an ovenhouse, separated from the living quarters by a road. The Tabun was placed inside the ground and partly above ground with a small opening on the front side to place the fuel in. In this case they used cow manure from the barn next to the ovenhouse. The cakes were drying outside. While cooking the bread the opening was covered with manure to keep the heat in the oven. The top of the Tabun had an opening of c. 40 cm. in diameter. The lady covered her arm with a woollen pad (Fig. 6). She was baking small loaves of flat round bread, ca. 20 cm. in diameter. The dough was smeared on a thick leathered cushion and slapped on the inside walls of the Tabun. While baking (ca. one minute) the oven was covered with a flat metal sheet. After finishing the bread was placed in a straw basket. This lady baked bread for five families, who brought their own prepared dough. It took 15 minutes to heat the fire with wood and manure. She baked for about an hour. Because the Tabun was still very hot she placed a kettle on top to boil water. This lady had a type of small bakery ; however there also was a regular baker in the village. Some inhabitants preferred the Tabun bread of the lady and paid for it.

49 In the same village I noticed that in the courtyards of houses people used both the Tannur in an ovenhouse, and a Tabun and a Waqdiah in the open area. I was told that all three were used for bread baking, however of different kinds. The Tannur which has a big opening of average 40-50 cm was always placed inside an ovenhouse.

50 The conclusions for this village are the following :

- the Tabun was partly dug in and used for bread baking and boiling water.
- The Tabun was built in an ovenhouse as protection against wind, rain and other damage.
- The ovenhouse was separate from the house.
- The bread was baked on the inside of the Tabun and produced fairly small pitahs.
- Bread of the small removable Tabun is baked on the outside.
- Bread of the big Tabun, partly in the ground and with a larger top opening, is baked on the inside.
- It was a kind of communal bakery, but also for private use.

4.3. The area around Damascus

51 I was told that at Ghezlania, a village outside Damascus, there was a « Tannur factory ». This « factory » was a place along the road, where a sixty year old lady has made her Tannurs for the past 40 years. The bread ovens were lined up near the street outside her

house. She was a highly skilled Tannur maker and delivered to private households, bakeries and restaurants, even exporting to Jordan, Lebanon and Saudi Arabia. The small Tannur was for private use, ca. 125 cm high with an opening of about 40-50 cm. They can fire for a couple of hours and last about 10 years. They cost c. $ 300 (1995). The large ones are ca. 190 cm high with an opening of 70 cm and used in bakeries and restaurants. They can fire for 24 hours and last for 25 years. They cost $ 400. The lady used the clay from the field close to her house. It was a very heavy clay, water did not penetrate easily. She mixed the clay with burlap, human hair and goathair and added grit to it. To construct a Tannur took about three days, but she worked on several Tannurs at the same time. The whole body was made in one day with a thin layer of clay, but the top was strengthened with a thick layer of clay (Fig. 7). She built the Tannur with loaf-shaped pieces of clay. There was no bottom. She used a flat volcanic stone to rub and polish the clay. The Tannurs were transported on trucks to their destination, tilted on an elevation and built in – as a precaution against children and chicken. The small one was placed in a courtyard and for household use. A corner was preferable since it had better protection against the wind. Most of the Tannurs were placed in a corner or against a wall and imbedded in a structure of natural stone or in cement blocks or in tiles. The space between the Tannur and the working table next to it was filled with salt. At the first firing (here they used wood from bushes) this salt pasted the two components together and made it as hard as stone. Once placed and fired this way it was forever impossible to remove the Tannur.

Fig. 7 : Ghezlania, Syria. “Tannur factory”. Woman making a Tannur.

52 Placed in a bakery or restaurant the Tannur was heated by gas and had a tiny hole at the bottom for the gas pipe (Fig. 8). This way it was much easier to control the heat. An exemple of a large Tannur was shown to me on the outskirts of Damascus in a « modern bakery ». The baker showed me how the dough was prepared in a big metal basin and baked in a gas Tannur. Here were made the very large thin flat « pancakes ». The baker protected his hands by woollen gloves, while the Druze lady at Abtaa protected her arm against the heat of the fire.

Fig. 8 : Damascus, Syria. “Modern bakery”. Tannur with gas pipe.

53 Qara, a village between Homs and Damascus showed a good example of a modern village that still maintains the tradition. Next to a brand new house, made of concrete blocks, stood the Tannur in a messy courtyard, built in the back corner, 15 years old and only used for festivities. The old house was transformed into a new one, but the old Tannur was still kept in place (Fig. 9). This was the same at Abtaa where the ovenhouse was the old part while the house was newly built. At modern Qara the daily bread was bought at the bakery. Grandma had built the Tannur with clay from the field. She had smoothed the Tannur with a piece of wood instead of stone as the « factory lady » at Ghezlania did. For the firing they used wood from the vineyards growing around the village. After the bread baking they used the Tannur to grill their meat in the modern way. They put the meat on a « barbecue pin » and placed it upright in the hot ashes. Or they grilled their chicken, wrapped in aluminium foil, in the Tannur.

Fig. 9 : Qara, Syria. 15 years old Tannur on courtyard of modern house.

4.4. The west and coastal area

54 In this area of Syria it was difficult to find an old functioning Tannur or Tabun. As it is a highly developed agricultural area most of the « old fashioned » households have

disappeared. Very seldom were the villagers still using a clay oven for bread baking, not even for private use. I studied a Tannur near Ugarit (West Syria). In this area, families are still baking their bread daily in a Tannur. In this case the Tannur was located close to a road. However at Amoud, west of Safita a lady made the modern gas-heated Tannurs. These Tannurs were made of factory clay and sometimes decorated on the rim and had a little hole at the bottom for the gaspipe (Fig. 10). The sizes of the Tannurs were the same as the Tannurs of the Ghezlania lady. At Amoud both Tannurs for private use and for restaurant use were produced.

Fig. 10 : Amoud, Syria. “Modern” Tannur with small hole on the bottom for gas pipe.

4.5. The north around Aleppo

55 Between Aleppo and Idlib at Areha Nsebeen the family Abed-al-Hadi-Tako showed me around. Their living quarters were grouped around a courtyard with one entrance. The ovenhouse (Fig. 11) was located in the SW corner next to the kitchen, but separated from it by a wall. In the ovenhouse they had a Tannur against the west wall. Here and elsewhere the Tannur was built on an elevation and the opening of the Tannur was tilted. This made it easier for the women to place the dough in the oven. They fired the Tannur with wood as there were enough bushes and trees in the area and no manure. The little manure they had was used as fertiliser in the fields. When finished with bread baking they placed a metal sheet on the top to cook or they placed a cooking pot inside the oven. Connected with the Tannur was a stone working table (Fig. 12) on which the women prepared the dough and where the cushion rested, on which they placed the bread when put in the fire. Next to the Tannur stood a Waqdiah and on the other side an open Tabun. Around the courtyard were also the barn for storage and a few animals and the reception room.

Fig. 11 : Areha Nsebeen, Syria. The oven house in the SW corner of living compound. Inside is a Tannur, Tabun and Waqdiah.

Fig. 12 : Between Aleppo and Hama, Syria. Tannur with working table against a low wall outside a village.

56 Along the road between Aleppo and Hama I noticed several Tannurs built in the open air against a low wall with a stone working table connected to it. Wood was used for firing and if it was raining the bakers covered it more or less with some metal sheets. The oven was at a little distance from the house outside the living compound.

4.6. The valleys of the Balikh and Chabur rivers

57 Outside Deir ez Zor was a « Tannur factory » along the road to the north. The shape of these Tannurs was different from the ones at Ghezlania. The latter ones had a rounded form while the former ones were more of a « bell shaped » type. These bread ovens were also about one meter high, made from clay from the area, tempered with grit, straw and animal hair (Fig. 13). They were sold to villagers around the area, but not exported outside Syria.

Fig. 13 : Outside Deir ez Zor, Syria. “Tannur factory” along the road.

58 Everywhere around the Chabur area (Northern Syria) people were using the Tannur. In case of the Chabur valley the Tannurs were built outside the houses, about 100 meters away and free standing, not attached to any construction to protect them.

59 In the village of As Suwar, located in an agricultural area where the farmers grow wheat, cotton and sugar beets, the Tannurs were standing outside the farmhouses. Those mudbrick farmhouses, enclosed by mudbrick walls, belonged to larger farmer compounds. The Tannurs were free standing, but built in a clay and stone construction. They had a small opening at the bottom front side for the fuel filling and to regulate the heat inside the oven. The cotton wood is brought in by the top opening. They rake the ashes from the bottom hole. The hole on the back is for an extra flow of air. This was observed by me and also told by the locals. The back of the oven sometimes had another small opening to regulate the flow of air.

60 Some of them had a kind of « neck », a higher back part, probably for protection against a bad wind (Fig. 14). Maybe that was one of the reasons that the women baked the bread in the early morning when the wind is still. It was interesting that these Tannurs were so far from the house. It was suggested that free standing Tannurs in the field were used by semi-nomadic people during the summer, while working on the fields. These « summer Tannurs » did not need any protection against the rain. In this case however the farmers were settled people, but in earlier days the Chabur valley was inhabited by nomads. Was this example of Tannur position a continuation of a long habit from the past ? Nowadays different families could use these field Tannurs.

Fig. 14 : As Suwar, Chabur valley, Syria. Small tannur with “neck” and wood in its door, along the road, outside farmer’s compound.

61 The people in the Chabur valley were still using this Tannur type for bread baking, not for cooking. The bread was still baked early every morning. When the weather is not so hot, breadbaking is done at different hours of the day. Mainly wood from the cotton plant was used for fuel.

4.7. The Euphrates river area

62 At Tarif along the Euphrates river people were using the same type of Tannur. Here the Tannurs were placed against the wall of a house with a small elevation on the back and built on a low plateau like the Tannurs at the Ghezlania area and elsewhere. These Tannurs also had the small opening at the bottom of the front and back sides (Fig. 15 and 16). Also here the wood from the cotton plant was used for fuel. One of the Tannurs was only five years old, but was in a bad shape. The owner in Tarif explained that they had to repair the Tannur every year and that they very soon would built a new Tannur. This seemed rather soon considering the lifetime of some of the Tannurs elsewhere up to 40 years ! The open position could be the cause of this quick deterioration. People in this village were able to build a Tannur by themselves. It was clear that the closer people lived near the city the less they produced Tannurs by themselves, but bought a Tannur at a « factory » or bought their daily bread at the village bakery. Therefore the old way of bread baking and the technique of making a clay bread oven is rapidly disappearing. An example is the village of Tell Mardikh (30 km south of Aleppo). Before the archaeologists started to excavate at Ebla the villagers were still using their old Tannurs. Nowadays the villagers mostly buy their bread at the communal bakery. The few Tannurs still standing are out of use and are falling apart (Fig. 17).

Fig. 15 : Tarif, Syria. Along the Euphrates river. Tannur on a low elevation, placed against the outside wall of a house.

Fig. 16 : Tarif, Syria. Along the Euphrates river, same Tannur as fig. 14, backside with opening on the bottom for extra air.

Fig. 17 : Ebla, Tell Mardikh, Syria. Destroyed “beehive” shaped oven house with Tannur.

63 The Balikh valley, formerly a very rich agricultural area, has deteriorated frighteningly since the Balikh river has been drying up, due to the water dams built in the north. In the past the Balikh valley was also inhabited by nomadic people and till very recently the villagers were using the Tannur. This type of bread oven has completely disappeared and instead the villagers are now using the « Saj », the Bedouin type of rounded metal pan, which can be placed over (three) stones or any other bottom support (Fig. 18). At Al Machlat the Saj was placed inside an oven house built of mudbrick and covered with a roof of wooden beams, straw and mudbrick. The ovenhouse was placed in the corner of a farmyard (Fig. 19).

Fig. 18 : Al Machlat, Balikh valley, Syria. “Saj” inside oven house: upside down plate covering an oven.

Fig. 19 : Al Machlat, Balikh valley, Syria. Farmhouse with oven house in corner and “beehive” shaped storerooms.

64 The farmhouse consisted of an old part, made of mudbrick and very suitable in that climate, and a « modern » house made of cement and not adapted to the extremes of the climate (Fig. 20). Also here modernisation required different housing. The family on the whole preferred to live in the old house ! Opposite the « two » houses were mudbrick storerooms of the « beehive » type and a mudbrick walled-in area for the chicken coop. Farmhouse and yard were not enclosed by a wall like the ones in the Chabur valley. In the Balikh valley the farmhouses were still very simple while in the Chabur valley very ornate big houses were built (for example at Gneze).

Fig. 20 : Al Machlat, Balikh valley, Syria. The old house of mud brick and the new house of cement.

65 The women in the Balikh valley were still baking their bread every day early in the morning. They used the wood of the cotton plant for fuel. The movable Saj is a much cheaper « oven » to bake the bread than the Tannur. It also consumes less fuel and does not need to be warmed up. Maybe that was the reason that the Tannurs disappeared from the Balikh valley recently and were replaced by the Saj. Could we expect the same change to happen in the Chabur valley when it slowly dries up ?

4.8. The desert around Palmyra

66 Around Palmyra the Bedouins made their different type of bread on the movable Saj. They used a curved metal pan which they placed with the hollow side on a fire on the ground (Fig. 21). Often the « kitchen » with the Saj was placed in a smaller, separate tent. The fire was made with some wood of desert bushes, the bread was thin and crispy, ca. 30 cm in diameter. They baked once in a couple of days and placed a cooking pot in the glowing fire when finished with bread baking.

Fig. 21 : Around Palmyra, Syria. Bedouin woman and “Saj” inside the tent.

5. General conclusions

67 It is interesting to see how common the Tannur is in the past and the present. Nowadays there is actually only one basic type still at work, but placed at different locations, in an ovenhouse, a courtyard or an open field. The Tannurs are used for household bread baking and for communal baking. The Tannur takes quite a lot of fuel, while the Tabun is more closed and saves fuel. It is clear that the Tannur and the Tabun are used in different areas, but sometimes also next to each other. With the Tannur we can speak of a permanent position as is the case with the built-in Tabun. The smaller Tabun is movable. The Tannur, Tabun and Saj can produce different types of bread. The Tannurs and the Tabuns are mostly protected by a wall or built in an ovenhouse. In the winter with the rains it is difficult to bake in the open air. The Tannurs I have seen use some kind of wood as fuel, while the Tabuns use manure. The clay ovens are disappearing because of modernisation.

68 Compared to these ethnographic results, many questions remain unanswered in the field of archaeology and further research is necessary. My next research will be focused on the excavated clay ovens. Could there be a line in the development of the clay ovens from the past to the present ? Were Tannurs just as common as they are nowadays ? Were there village bakeries ? Did every household have a clay bread oven ? Does a couple of Tannurs together mean a communal bakery or a factory ? Was the bread oven covered or protected or placed on purpose near the corner of two walls ? Did the Tannur and Tabun produce different bread and was that inherent to the type of wheat and the area ? Were the Tannurs partly built in ? Were the sizes the same as nowadays ? Can we analyse the ashes to find the type of fuel they used ?

69 Experimental archaeology helps to understand a little bit about the building and firing of an oven and baking bread. The ethnoarchaeology shows also the way of building a clay oven and how people use it. It also shows how important a bread oven is in a family or community. The amount and size of ovens found in an excavation can tell us even more about the village, their inhabitants and their environment. Therefore it is very important that we archaeologists pay close attention while excavating clay ovens, even if they are sometimes difficult to recognise as such.

BIBLIOGRAPHIE

DALMAN G. F., 1935. Brot, Öl und Wein. Arbeit und Sitte in Palestina, Band IV.

KILLEBREW A., Fine S., 1991. Quatzrin, reconstructing village life in Talmudic times. BAR vol. 17, n ° 3, may/june 1991 : 44-56.

KOCHAVI M., RENNERT., SPAR I., YADIN E., 1992. New excavations at the home of king David's bride and the land of Absolom's refuge. BAR vol. 18, n° 4, july/ august 1992 : 30-44.

MCQUITTY A., 1984. *An ethnographic and archaeological study of clay ovens in Jordan*. Annual of the Department of Antiquities of Jordan 28 : 259-267.

VAN DER STEEN E. J.,1991. *The Iron Age Bread Ovens from Tell Deit'Alla*. Annual of the Department of Antiquities of Jordan 35 : 135-153.

RÉSUMÉS

Cet article explore les relations entre les restes archéologiques de fours en argile découverts dans les niveaux de l'âge du fer de Tel Hadar, en Israël, et les comportements socioculturels liés aux fours à pains en argile actuels. Après une brève introduction sur un des fours fouillé et un rapport détaillé d'une expérimentation menée avec des habitants druses, l'essentiel de l'article présente mes travaux ethnoarchéologiques des dernières cinq années en Syrie. Grâce à une démarche qui combine archéologie, ethnoarchéologie et archéologie expérimentale, des techniques de construction, de types de fours variés, et bien différenciés ont pu être documentés et leurs fonctions culinaire et sociale ont pu être précisées. Sur base de cette recherche, un tableau a été développé pour maximaliser le potentiel en information à retirer de la fouille des fours en argile.

This article explores the relationship between the archaeological remains of clay ovens excavated in the Iron Age level at Tel Hadar, Israel and modern socio-cultural behaviour linked to clay ovens used for bread baking. After a short introduction on one of the excavated ovens and the precise report of one experimentation with local people, most of the text describes my ethnoarchaeological observations from the past five years in Syria. Through a study that combines archaeology, ethnoarchaeology and experimental archaeology I documented techniques of construction, differentiated various types of ovens and recorded their culinary and social function. Based on this research a worksheet has been developed to maximise the potential for information retrieved during the excavation of clay ovens.

INDEX

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